



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,487	09/02/2004	Kazuhisa Senda	121036-0070	2843
7590 Michael S Gzybowski Butzel Long Suite 300 350 South Main Street Ann Arbor, MI 48104				
02/19/2009				
EXAMINER				
O HERN, BRENT T				
ART UNIT		PAPER NUMBER		
1794				
MAIL DATE		DELIVERY MODE		
02/19/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/506,487

Applicant(s)

SENDA ET AL.

Examiner

Brent T. O'Hern

Art Unit

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Abandonment

1. The granting of Applicant's petition for revival mailed 12/30/2008 for Applicant's application that became abandoned on 2/20/2008 is noted.

Claims

2. Claims 1-4 and 6-15 are pending.

WITHDRAWN REJECTIONS

3. All rejections of record in the Office Action mailed 19 February 2008, pages 3-9, paragraphs 7-12, have been withdrawn due to Applicant's amendments in the Paper filed 17 December 2008.

NEW REJECTIONS

Claim Rejections - 35 USC § 112

4. Claims 1-4 and 6-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. The phrase "reacting ... capable of undergoing hydrosilylation reaction" in claim 1, lines 2-5 is vague and indefinite since is unclear whether the materials have reacted or not reacted since the first part of the phrase indicates the materials have reacted, however, the last part of the phrase indicates the materials have not reacted but rather may or may not react in the future.

6. The phrase "composition ... is directly applied to an adhesive-coated metal plate or resin plate and cured" in claim 1, lines 12-13 is vague and indefinite since it is unclear whether the composition is applied to a plate per the invention or to some other plate.

Clarification and/or correction is required.

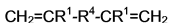
Claim Rejections - 35 USC § 103

7. Claims 1-3, 6, 8-9 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farnam (US 4,463,704) in view of Kusakabe et al. (US 5,986,014), Nemec et al. (US 4,010,082) and Taylor et al. (US 4,008,190).

Regarding claims 1 and 14-15, Farnam ('704) teaches a gasket (*See Abstract, l. 2.*), which comprises a cured product layer (*See Abs., l. 17 "cure the coating".*) and a metal plate or resin plate (*See col. 3, l. 26 "polymeric material", a resin. The adhesive coating language per claim 1, ll. 12-13 is interpreted as optional and only required for a metal plate and not a resin plate. Per Applicant's Specification, coating the plates with adhesive are alternative embodiments and the above interpretation is consistent with Applicant's Specification.*), the cured product layer being provided on at least one surface of the resin plate (*See col. 8, ll. 46-48 and 18-26 "applied to top and bottom surfaces" and Abs., ll. 4-5 and 17 and adhesive coating. The composition is interpreted as being directly applied.*), however, fails to expressly disclose a cured product layer obtained by combining and reacting an acrylic polymer having at least one alkenyl group capable of undergoing a hydrosilylation reaction by copolymerization of an acrylic acid ester monomer and a compound as a second monomer represented by the general formula: $\text{CH}_2=\text{CR}^1-\text{R}^4-\text{CR}^1=\text{CH}_2$ wherein R^1 is a hydrogen atom or a methyl group and

R^4 is an alkylene group of C_2-C_6 ; or wherein the second monomer is one of 1,5-hexadiene, 1,7-octadiene and 1,9-decadiene, a hydrosilyl group-containing compound; and a hydrosilylation catalyst as essential components.

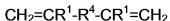
However, Kusakabe ('014) teaches gaskets made from a composition comprising an acrylic polymer having at least one alkenyl group capable of undergoing a hydrosilylation reaction (*See col. 11, ll. 43-45 and col. 14, l. 63.*), by copolymerization of an acrylic acid ester monomer and a compound as a second monomer represented by the general formula:



wherein R^1 is a hydrogen atom or a methyl group, R^4 is a group of C_1-C_{20} (*See col. 12, ll. 56-60 wherein 1,5-hexadiene, 1,7-octadiene and 1,9-decadiene satisfy the above formula with R^4 having 2, 4 or 6 carbons respectively. See also col. 5, l. 59 to col. 6, l. 33 wherein Applicant's left R^1 is equivalent to Kusakabe's R^3 and right R^1 which is equivalent to Kusakabe's R^6 which is a hydrogen or methyl group and explained in col. 5, ll. 63-67 and wherein Applicant's R^4 is equivalent to Kusakabe's R^4 and R^5 .);*

a hydrosilyl group-containing compound (*See col. 11, l. 46.*) and a hydrosilylation catalyst as essential components (*See col. 14, ll. 49-50.*) for the purpose of providing a gasket having good depth curability without foaming (*See col. 14, ll. 47-64.*).

Nemec ('082) teaches adding to a composition comprising acrylic and methacrylic acids a compound having the formula



wherein R^1 is a hydrogen atom or an aryl group which includes a methyl group and R^4 is an alkylene group of C_2 (*See col. 1, l. 57 to col. 2, l. 18.*) for the purpose of inhibiting the polymerization of acrylic and methacrylic acids at ambient or above temperature (*See col. 1, ll. 57-66.*).

Furthermore, Taylor ('190) teaches automobile gaskets made from compounds such as $CH_2=CR^1-R^4-CR^1=CH_2$ wherein R^1 is a hydrogen atom or a methyl group, R^4 is an alkylene group of C_2-C_6 , such as 1,4,9-decatriene or dienes such as 1,5-hexadiene and 1,4-pentadiene (*See col. 2, ll. 41-52.*) for the purpose of providing automobile gaskets that are oil, chemical and heat resistant (*See col. 7, ll. 27-32.*). Furthermore, Taylor ('190) teaches alternative uses of the specified trienes and dienes in order to provide gaskets having oil, chemical and heat resistance.

Regarding the phrase "wherein the second monomer reacts at a final stage of the polymerization reaction or after completion of the reaction of the acrylic acid ester monomer in the synthesis of acrylic polymers by living radical polymerization" in claim 15, ll. 1-4, it is noted that the above references teach the same cured product obtained by reacting the same acrylic acid with the same second monomer, hydrosilyl group-containing compound and hydrosilylation catalyst. Thus, since the products are the same the above language does not further distinguish the prior art of record.

Therefore, it would have been obvious to one having ordinary skill in the art at the time Applicants' invention was made to use the product as taught by Kusakabe ('014), Nemec ('082) and Taylor ('190) in Farnam ('704) in order to provide gaskets having oil, chemical and heat resistant with good depth curability without foaming.

Regarding claim 2, Farnam ('704), Nemec ('082) and Taylor ('190) teach the gasket discussed above, however, fail to expressly disclose a gasket wherein the component of the composition is a liquid acrylic polymer having a number average molecular weight M_n of 500 or more and a molecular weight distribution (M_w/M_n) of 1.8 or less.

However, Kusakabe ('014) teaches a gasket wherein the component of the composition is a liquid acrylic polymer having a number average molecular weight M_n of 500 or more (*See col. 11, ll. 49-50 wherein the M_w is from 500 to 50,000 and col. 3 ll. 64-65 wherein $M_w/M_n = 1.1 - 1.5$, thus making M_n from 333 to 45,455.*) and a molecular weight distribution (M_w/M_n) of 1.8 or less (*See col. 3, ll. 64-65.*) for the purpose of providing sufficient physical properties and is not too viscous (*See col. 11, ll. 52-57.*).

Therefore, it would have been obvious to one having ordinary skill in the art at the time applicants' invention was made to use the product with the acrylic polymer with M_n and M_w/M_n as taught by Kusakabe ('014) in combination with the above teachings in Farnam ('704) in order to provide a polymer that has sufficient physical properties and is not too viscous.

Regarding claim 3, Farnam ('704) teaches a gasket wherein the cured product layer has a film thickness of 1-500 μm (*See col. 3, ll. 44-47 "any desired thickness" and col. 9, ll. 18-21, 0.0005 – 0.005 in. which equals 12.7 – 127 μm .*).

Regarding claim 5, Farnam ('704) teaches a gasket wherein the composition is directly applied to an adhesive-coated metal plate or resin plate (*See col. 8, ll. 46-48 "adhesive coatings" and "applied to the top and bottom surfaces of the gasket part" and Abs., ll. 4-5 "coated with a liquid dispersion of polymer or polymers".*) and cured (*See Abs., l. 17, "cure the coating".*).

Regarding claims 6, 8 and 9, Farnam ('704) teaches a gasket being an engine oil pan gasket (*See col. 1, ll. 30-35 "pan gasket".*).

8. Claims 4 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farnam (US 4,463,704) in view of Kusakabe et al. (US 5,986,014), Nemec et al. (US 4,010,082), Taylor et al. (US 4,008,190) and DeCato et al. (US 6,444,740).

Regarding claim 4, Farnam ('704), Kusakabe ('014), Nemec ('082) and Taylor ('190) teach the gasket as described above, however, fail to expressly disclose a gasket wherein the cured product layer has a surface hardness of 45 or less. However, DeCato ('740) teaches the cured product layer's properties and characteristics, such surface hardness, can vary depending on the additives (*See col. 5, ll. 46-51.*). Furthermore, DeCato ('740) teaches a surface hardness of 45 or less (*See col. 15, Table 7a, "Comp. 5".*).

Therefore, it would have been obvious to one having ordinary skill in the art at the time Applicants' invention was made to provide the above surface since DeCato ('740) teaches that silicone compositions include plasticizers when it is desirable for the specific surface hardness of the cured product layer. Furthermore, DeCato ('740) teaches the surface hardness of the cured product layer of 45 or less.

Regarding claim 10, Farnam ('704) teaches an engine oil pan gasket (*See col. 1, ll. 30-35 "pan gasket".*).

9. Claims 7 and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farnam (US 4,463,704) in view of Kusakabe et al. (US 5,986,014), Nemec et al. (US 4,010,082), Taylor et al. (US 4,008,190), DeCato et al. (6,444,740) and Kawamura (US 5,684,110).

Farnam ('704), Kusakabe ('014), Nemec ('082), Taylor ('190) and DeCato ('740) teach the gasket as described above, however, fail to expressly disclose a gasket wherein the cured product is provided on a resin plate that has a softening point of 100 °C or more.

However, Kawamura ('110) teaches resins that have a softening point of 100 °C or more (*See col. 6, ll. 52-55 "softening point from 5°C to 200 °C".*) for the purpose of providing a gasket to undergo a very slow cure (*See col. 6, ll. 3-4.*) for having acceptable storage stability (*See col. 6, ll. 41-42.*).

Therefore, it would have been obvious to one having ordinary skill in the art at the time Applicants' invention was made to provide a resin plate of Farnam ('704) with a softening point of 100 °C or more as taught by Kawamura ('110) in order to provide a gasket having acceptable storage stability as described above.

ANSWERS TO APPLICANT'S ARGUMENTS

10. In response to Applicant's arguments (*See p. 10, para. 3 to p. 13, para. 2, of Applicant's Paper filed 11 December 2008.*) regarding the process limitations, it is noted than in view of Applicant's amendment to independent claim 1 the scope of Applicant's claims have changed which more precisely define the structure as opposed to the process related to making the product, thus, Applicant's arguments are moot. The teachings of the amended claims, including the new reference, are discussed above.

11. In response to Applicant's arguments (*See p. 13, para. 6 to p. 14, para. 4, of Applicant's Paper filed 11 December 2008.*) that Farnam ('704) does not teach "an adhesive-coated metal plate" or "an adhesive coated resin plate" per the amended claims and that Farnam's ('704) gasket is porous and not suitable for adhesive, it is firstly noted that Applicant's arguments are not commensurate in scope with the claims. Claim 1, line 13 does not state "an adhesive coated resin plate" but rather just "resin plate". Per Applicant's Specification, coating the plates with adhesive are alternative embodiments and the above interpretation is consistent with Applicant's Specification.

12. In response to Applicant's arguments (*See p. 14, para. 5 to p. 15, para. 2, of Applicant's Paper filed 11 December 2008.*) that Kusakabe ('014) does not teach the specified alkylene group, it is noted that Kusakabe ('014) is cited for teaching the specified dienes which Applicant does not rebut. Newly cited Nemec ('082) teaches the same monomer as discussed above.

13. In response to Applicant's arguments (*See p. 15, paras. 3-4 of Applicant's Paper filed 11 December 2008.*) that Taylor ('190) does not disclose metal or resin gaskets, it is noted the Examiner does not cite said reference for teaching such.
14. No further precise arguments are presented than discussed above.
15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brent T. O'Hern whose telephone number is (571)272-0496. The examiner can normally be reached on Monday-Thursday, 9:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on (571) 272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BTO/
Brent T. O'Hern
Examiner, Art Unit 1794
February 7, 2009

/Elizabeth M. Cole/
Primary Examiner, Art Unit 1794